REMARKS

The Examiner rejected claims 10, 11 and 17-19 under 35 U.S.C. §102(b) as being anticipated by Dildine (U.S. 5,416,422).

Claims 12-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dildine in view of Heikkilaet et al. (US 5,638,034).

Claim 16 was rejected under 35 U.S.C. §103(a) as being unpatentable over Dildine in view of Suominen et al. (US 5,926,513).

Claim 20 was rejected under 35 U.S.C. §103(a) as being unpatentable over Dildine in view of Richard James Dewey (GB 2234874 A).

Claims 1-3, 6 and 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dildine in view of Nagasaka (U.S. 2004/0039540).

Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Dildine in view of Nagasaka and Heikkilaet et al.

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Dildine in view of Nagasaka and Suominen et al.

Claims 7 and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dildine in view of Nagasaka and Richard James Dewey.

Anticipation under 35 U.S.C. §102(b); Dildine - claims 10, 11, 17:

In rejecting claims 18 and 19, the Examiner stated that Dildine teaches solving a matrix equation resulting from the noise measured in the at least two measurement bands of each of the intermediate frequency signals by the sampler and applying the least squares method. To support this position, the Examiner cited col. 2, lines 30-50 wherein Dildine recites that "[t]hree independent measurements...result[s] in three independent equations in three unknowns, from which the image noise power can be determined..."

However, neither in the portions of Dildine cited by the Examiner nor elsewhere in the reference does Dildine disclose or suggest "solving a matrix equation resulting from noise measurements and applying the least squares method" (as recited in applicants' claims 18 and 19). Because these limitations of applicants' claims are not disclosed by Dildine, applicants' claims cannot be anticipated by Dildine. (A cited prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. Anticipation is only shown where each and every limitation of the claimed invention is found in a single cited prior art reference. (MPEP § 2131).

In addition to not anticipating applicants' claims 18 and 19, Dildine's teachings are inconsistent with "applying the least squares method". Dildine uses three independent equations with three unknowns to determine image noise power, whereas the least squares method relies on a matrix representation wherein there are more independent equations than unknowns. For example, Charles W. Therrien, *Discrete Random Signals and Statistical Signal Processing*, pages 520-521, ISBN 0-13-852112-

3 (hereinafter "Therrien reference"), cited and incorporated by reference by applicants, shows that in applying the least squares method, a data matrix representing equations and unknowns has dimension KxP where K>P. For K>P, there are more rows than columns in the matrix, illustrating that there are more independent equations than unknowns in the matrix representation. Dildine's three independent equations with three unknowns do not meet the condition of K>P (since K=P=3), a condition relied upon in applying the least squares method.

The Therrien reference further states that "usually, K is considerably larger than P, so that the data matrix is tall and thin". Consistent with "applying the least squares method", applicants' specification (pages 8-9, equations 1-3) shows an example of matrix equations, wherein there are more independent equations (K = 7 in applicants' example) than unknowns (P = 5 in applicants' example).

In sum, not only does Dildine fail to disclose or suggest applying the least squares method, Dildine's teachings are inconsistent with applying the least squares method, as recited in applicants' original claims 18 and 19.

Applicants have amended independent claim 10 to include the limitation ("solving a matrix equation resulting from the noise measurements in (b) and applying the least squares method") present in original claim 18, making claim 10 allowable over Dildine.

Claims 11 and 17 depend on amended independent claim 10. Since claim 10 is not anticipated by Dildine, dependent claims 11 and 17 are not anticipated and believed allowable.

Obviousness under 35 U.S.C. §103(a) – claims 12-16, 20:

Dependent claims 12-15 include the limitation "applying the least squares method" that is present in amended independent claim 10. Because this limitation is not disclosed or suggested by the combination of Dildine and Heikkilaet et al., applicants' claims 12-15 cannot be obvious based on Dildine in view of Heikkilaet et al. (A *prima facie* case of obviousness requires that the prior art references when combined must teach or suggest all the limitations of applicants' claims. MPEP 706.02(j)).

Similarly, the limitation "applying the least squares method" is not disclosed or suggested by Dildine in view of Suominen et al., or by Dildine in view of Richard James Dewey, making claims 16 and 20 allowable over these combined references, respectively.

Obviousness under 35 U.S.C. §103(a) – claims 1-5, 7-9:

In rejecting claim 6 under 35 U.S.C. §103(a), the Examiner combined the teachings of Dildine and Nagasaka. The Examiner again cited col. 2, lines 30-50 of Dildine, stating that Dildine teaches solving a matrix equation resulting from the noise measured in the at least two measurement bands of each of the intermediate frequency signals by the sampler and applying the least squares method. This limitation of applicants' claim 6 ("solving a matrix equation resulting from the noise measured in the at least two measurement bands of each of the intermediate frequency signals and applying the least squares method") is not disclosed or suggested by Dildine, or by the combination of Dildine and Nagasaka. Accordingly, applicants' original claim 6 cannot be obvious based on Dildine in view of Nagasaka. (A *prima facie* case of

obviousness requires that the prior art references when combined must teach or suggest all the limitations of applicants' claims. MPEP 706.02(j)).

Applicants have amended independent claim 1 to include the limitation "applying the least squares method" present in original claim 6. Dependent claims 2-3 and 8 include this limitation of amended independent claim 1, and are believed allowable over Dildine in view of Nagasaka based on the allowability of amended independent claim 1.

Similarly, the limitation "applying the least squares method" is not disclosed or suggested by Dildine in view of Nagasaka and Heikkilaet et al., by Dildine in view of Nagasaka and Suominen et al., or by Dildine in view of Nagasaka and Richard James Dewey, making claims 4, 5, 7-9 allowable over these combined references, respectively.

CONCLUSION

Applicants have shown that originally presented claims 18 and 19 are not anticipated by Dildine and that originally presented claim 6 is not obvious based on Dildine in view of Nagasaka. Accordingly, applicants believe that these claims, as originally presented, are allowable over the prior art.

Applicants have amended independent claim 1 to include the limitations of original claim 6, and have amended independent claim 10 to include the limitations of original claim 18. Applicants believe that these amended independent claims 1, 10 are allowable. Applicants have also shown that remaining dependent claims 2-5, 7-9, 11-17, and 20 are not obvious in view of the cited references and believe that the remaining claims in the present application are in condition for allowance.

If the Examiner has any questions or would like to discuss this application in more detail, he is invited to call the applicants' attorney at the telephone number given below.

Respectfully submitted,

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